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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/595,323 | 03/22/2007 | Pier John Anthony Sazio | DYOUP0313US | 7470 |

23908 7590 10/17/2011
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| EXAMINER |
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FLETCHER III, WILLIAM P

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| ART UNIT | PAPER NUMBER |
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1717

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| MAIL DATE | DELIVERY MODE |
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10/17/2011

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|---|-------------------------------------|--|
| Office Action Summary | Application No. 10/595,323 | Applicant(s) SAZIO ET AL. | |
| | Examiner William Phillip Fletcher III | Art Unit 1717 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 September 2011.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on ____; the restriction requirement and election have been incorporated into this action.
- 4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 5) ☒ Claim(s) 1-54 is/are pending in the application.
- 5a) Of the above claim(s) 8 and 36 is/are withdrawn from consideration.
- 6) ☐ Claim(s) ____ is/are allowed.
- 7) ☒ Claim(s) 1-4, 6, 7, 11-14, 20, 22-29, 32, 45, 48 and 49 is/are rejected.
- 8) ☒ Claim(s) 5, 9, 10, 15-19, 21, 30, 31, 33-35, 37-44, 46, 47 and 50-54 is/are objected to.
- 9) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 10) ☐ The specification is objected to by the Examiner.
- 11) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 12) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Terminal Disclaimer

1. The terminal disclaimer filed on 15 September 2011, disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of US 7,799,663 B2, has been reviewed and is accepted. The terminal disclaimer has been recorded.

Election/Restrictions

2. Claims 8 & 36 remain withdrawn.

Response to Arguments

3. The obviousness-type double patenting rejections, set forth in the prior Office action, are withdrawn in view of the terminal disclaimer. However, upon further consideration, a new ground(s) of rejection is made in view of EP 1 345 069 A2, made of record by Applicant in the IDS filed 7 April 2006.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation

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under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1, 3, 4, 6, 7, 11-14, 20, 22-29, 32, 45, 48, and 49, are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 1 345 069 A2.

A. Claims 1, 3, 14, & 22

i. Since this reference was made of record by Applicant in the IDS filed 7 April 2009, Applicant is presumed to be familiar with its contents. Upon further consideration of the term *metamaterial*, as defined in the specification, the reference is applicable.

ii. All of the limitations of this claim, except for the pressure's being explicitly defined as *high pressure*, are taught by this reference. See the abstract, [0016], [0017], [0019], and [0020]. It is the Primary Examiner's position that the pressure utilized (see [0019]) is a result-effective variable affecting the degree and efficiency of filling of capillaries (16) and would have been obvious to optimize by routine experimentation, absent evidence of criticality (see MPEP 2144.05).

B. Claims 4, 6, & 7 Capillaries having length greater than width are illustrated in Fig. 2, for example. Since the ultimate length of the optical fiber determines the ratio of length to width, this, too, is a result-effective

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variable that it would have been obvious to optimize for a given optical fiber application.

- C. Claim 11 This reference discloses a total outer diameter of 250-1000 microns [0015], with the capillaries being smaller, which would place them in the range of 1 micron - 1 mm.
- D. Claim 12 This reference teaches silica cladding region (14) [0014].
- E. Claim 13 The materials disclosed by this reference at [0017-0020] read on the limitations of this claim.
- F. Claims 20 & 24-29 This reference teaches "active material(s)," which is a fair teaching of one or more active material. The limitations of this claim would have been a readily obvious means for introducing a second or subsequent active material following deposition of a first material.
- G. Claim 23 This reference does not utilize the term *quantum structure* but, since the same materials and methods claimed would have been obvious in view of this reference, it is presumed that resulting product possesses the same properties.
- H. Claim 32 This reference teaches subsequent heating [0019, 0020].
- I. Claims 45, 48, & 49 This reference teaches these limitations at [0020].

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7. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over EP 1 345 069 A2, as applied to claim 1 above, further in view of Cooper (*Adv. Mater.* **2003**, 15, No. 13, July 4, 1049-1059).

A. Cooper was also cited by Applicant and, consequently, Applicant is also presumed to be familiar with its contents.

B. EP '069 does not expressly teach the use of supercritical fluids.

C. Cooper teaches that supercritical fluids may be substituted for conventional solvents [p. 1049, 1st column] and may be utilized to deposit films and nanoparticles in pores [p. 1056].

D. Consequently, it would have been obvious to one skilled in the art to modify the process of EP '069 to replace the conventional solvents with SCF, motivated by the advantages disclosed by Cooper [p. 1049, 1st column].

Allowable Subject Matter

8. Claims 5, 9-10, 15-19, 21, 30, 31, 33-35, 37-44, 46, 47, and 50-54, are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. The following is a statement of reasons for the indication of allowable subject matter: The prior art neither teaches nor suggests the claimed process with the additional limitations of these claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William Phillip Fletcher III whose telephone number is (571)272-1419. The examiner can normally be reached on Monday through Friday, 9:00 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dah-Wei Yuan can be reached on (571) 272-1295. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/William Phillip Fletcher III/
Primary Examiner, Art Unit 1717

11 October 2011